

**Use of a Community-Based Participatory
Approach to Assess and Address
Children's Exposure to Air Pollutants at
an Elementary School Located in Close
Proximity to a Major Freeway in Los
Angeles.**

Rania Sabty-Daily, PhD, MPH, REHS

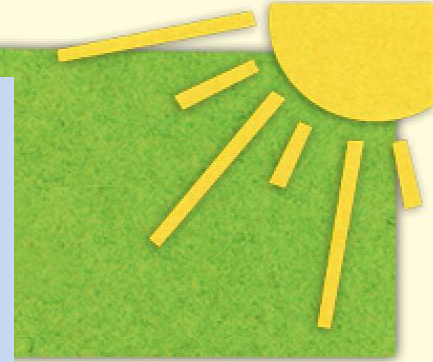
Trident University International
and
California State University Northridge

January 27, 2014

rania.sabty-daily@trident.edu

(310) 890-2598

Co-presenters



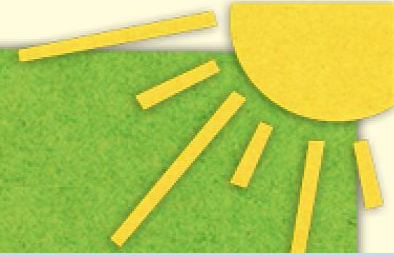
Stephon Litwinczuk, parent and documentary film maker, EMLS

Christina Dronen, parent and comedian, EMLS

Tracy Pumilia, Principal, EMLS

Mike Reynolds, Assistant Superintendent, Culver City Unified School District

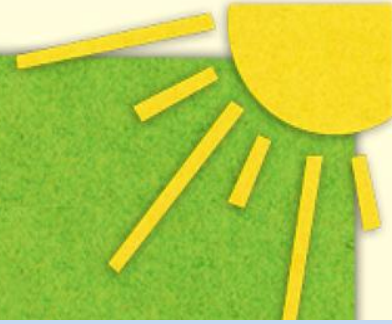
Objectives



- Background about school
- Essentials for community-engagement in environmental health
- Methodology:
 - ⊙ Community partners
 - ⊙ Core Principles
 - ⊙ Activities & accomplishments
 - ⊙ Year 1
 - ⊙ Year 2
 - ⊙ Year 3
- Challenges & lessons learned
- Next Steps
- Community resources

Clean Air: El Marino

Background: School



- Most of campus is located within 500 feet from the busiest freeway in the US-the 405 Freeway.
- School located downwind from the freeway, during daytime, when children are at school. Wind pushes fwy air pollutants towards the east and towards the school.
- **Previous studies at EMLS:** Only one study , 2008. In response to teachers' concern about dust and noise exposure during freeway construction.
 - Measured lead in wipe-samples of dust settled on windowsills, inside and outside classrooms; no significant concern.
 - The study also measured noise and found levels to be within OSHA's standards. No additional data was gathered to measure air pollutants.
- **Freeway expansion Environmental Impact Report (EIR):** This EIR, in 2000, did not include EMLS as a potential impacted entity, although it came as close as listing El Marino park!
 - statute of limitations, CalTrans cannot be held liable.

Background: School School Report Card- 2012-13

Student Enrollment by Grade Level (School Year 2011-12)

Grade Level	Number of Students
Kindergarten	133
Grade 1 -----	133
Grade 2	131
Grade 3	127
Grade 4	116
Grade 5	123
Total Enrollment	763

Student Enrollment by Group (School Year 2011-12)

Group	Percent of Total Enrollment	Group	Percent of Total Enrollment
Black or African American	5.4	White	28.8
American Indian or Alaska Native	0.1	Two or More Races	11.3
Asian	19.4	Socioeconomically	15.7
Filipino	0.8	Disadvantaged	23.2
Hispanic or Latino	34.2	English Learners	3.8
Native Hawaiian/Pacific Islander	0	Students with Disabilities	

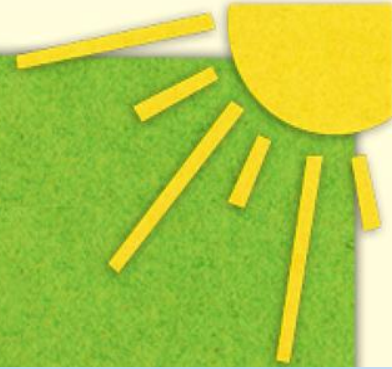
Clean Air: El Marino

Mitigation of Traffic-related Pollution in Schools

- SCAQMD commissioned a study conducted by UC Riverside in 2010 to evaluate the ability of various air filtration devices to reduce the outdoor concentrations of traffic related air pollutants in a typical classroom setting.
- 150 manufacturers were contacted, 9 companies participated in the program, and 15 different air filtration devices were submitted for testing.
- Technologies from IQAir were found to be the only ones that met the following performance criteria: high removal efficiency, low pressure drop across filter panels, and no ozone generation, noise levels below 45 dbA (type of filter: IQ-16, MERV 16).
- EPA's Office of Environmental Health Hazard Assessment and the SCAQMD advise the use of high-efficiency filtration coupled with HVAC systems to improve indoor air quality in schools located near major roadways/freeways.
- Effectiveness of sound walls and vegetation at controlling air pollutant emissions-evidence is limited.

Clean Air: El Marino

Discussion Point 1



How do we determine the methodology of a study, in a community-based project aimed at addressing environmental hazards? And, who determines the approach ?

Clean Air: El Marino

Essentials for Community-Engagement in Environmental Health



- **Establishing respectful, trusting relationships is critical-** takes considerable time and effort.
- **Power is shared. Resources are shared.** Community members are integral, equal partners. The playing field is leveled.
- Engaging with the community **leverages knowledge, wisdom and experience** to solve environmental health problems.
- Environmental health in communities requires community leadership and engagement, where **communities are co-producers of knowledge.**
- **Community determines the approach.** Academics were 'right on' with the traffic-related air quality problem but not the approach.

Clean Air: El Marino

Community Partnership



Community partners

School principal

Superintendent, CCUSD

Assistant Superintendent, CCUSD

Parents

Teachers

Custodians

Academic/Science Community partners

CSUN

USC

AQMD

EPA

Clean Air: El Marino

Time Line



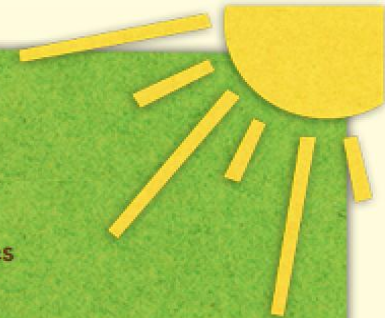
2011-12: Fall '11 launched

2012-13: much progress

2013-14: lots done and more to follow

2011-12
School Year

Advocates 4 Clean Air: El Marino



- Home
- About Us
- Parents
- Teachers
- Action
- Indoor Cleaning
- No Idling
- Events
- Supporters
- Resources
- FAQ

W
E
B
S
I
T
E



**Kitchen Table
meetings
(Parents & Teachers)**

Weekly school eBlast



Back Burner

Things continue to "simmer" on the backburner – where good ideas won't go cold. Here's a cheat sheet of the parents heading up important issues that need your help - don't be shy - they'd love to hear from you!

- Environmental Concerns at El Marino - [Rania Sabty-Daily](#)
- Safe Routes To School Committee -
- Healthy Sch [Maggie Wal](#)



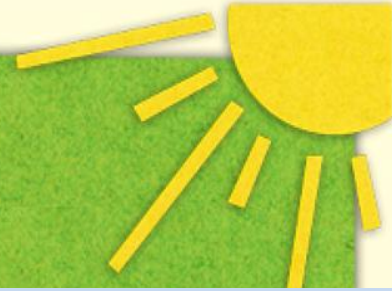
The Right to Breathe

A signature documentary film by the South Coast Air Quality Management District



Clean Air: El Marino

2011-12



- Started Advocacy group
- Decided we would build a community based effort: teachers, parents, administrators, academics.
- Began raising awareness about the school's proximity to the freeway and potential children health impacts
- Monthly meetings
- Invited parents, teachers, school principal and school board members to meetings.
- Meetings held in homes. Started very small...
- Voted on name- Advocates 4 Clean Air: El Marino
- Communicated with school community: Weekly E-blast: back burner status
- Developed Website: communication tool + source of information
- Gathered support from teachers for a cause that they have been pursuing unsuccessfully for multiple years
- Statement of Support: united parents and teachers for a cause that affects children, teachers and staff
- Researched info:
 - Literature review on pollution near freeways and health effects in children
 - Similar community efforts: Long Beach communities, Mothers of East LA
 - Traffic air pollution mitigation solutions for schools
- Reached out to academic & regulatory institutions: SCAQMD, USC, UCLA

Clean Air: El Marino

STATEMENT OF SUPPORT



Advocates for Clean Air: El Marino, Statement of Support from Culver City Unified School District and Culver City Unified School District School Board

A large group of parents, teachers and community members have looked at the scientific evidence provided by various sources, including AQMD, EPA, the published scientific literature, as well as the information considered when the California senate decided to pass legislation, SB 352 *Escutia* in 2003, that stated that given the health and safety risk of a school being within 500 feet of a freeway or busy traffic corridor, the state would no longer be allowed to build new schools in that proximity. Children are particularly vulnerable given their developing lungs. While schools cannot be moved, mitigation measures exist to reduce exposure to traffic air pollution.

We, the undersigned, would like CCUSD and the Board to know that there is a lot of interest in the community in mitigating the health impact of a school being located in close proximity to a major roadway, using best available practices. We understand that the district may not have all the available resources on hand to resolve the air quality issue on its own, so at this point we are simply asking for support in helping us to research, present and consider, in a timely fashion, possible solutions including funding for consideration.

Print Name	Signature	Relation to CCUSD	School if applicable	Email/phone
Hoshe Sargent	<i>Hoshe Sargent</i>	Grandparent	El Marino	210/836-1757
Jess Parli	<i>Jess Parli</i>	Parent	El Marino	
PIT O Jomiland	<i>PIT O Jomiland</i>	parent	El Marino	310/315-5655
Jodi Poinsett-Tobish	<i>Jodi Poinsett-Tobish</i>	parent	El Marino	310-200-0721
Er Poinsett-Tobish	<i>Er Poinsett-Tobish</i>	parent	El Marino	
APRILINA PERIANO	<i>APRILINA PERIANO</i>	parent	El Marino	310-895-5650
Nancy Goldberg	<i>Nancy Goldberg</i>	School Board	DISTRICT	goldberg7@aol.com
YEE-PING CHO	<i>YEE-PING CHO</i>	PARENT	EL MARINO	yee-ping@schoolmail.com
Claudia Eschvelo	<i>Claudia Eschvelo</i>	parent	El Marino	ESCHVELO77@YAHOO.COM
FRANCINE GRACE	<i>FRANCINE GRACE</i>	PARENT	EL MARINO	URLtoeducation@gmail
KATRINA McDONALD	<i>KATRINA McDONALD</i>	LA WORKY		mondonaldp@newcity.com
Atsuko Moreno	<i>Atsuko Moreno</i>	parent	El Marino	atsuko3@aol.com
MAYRA GOMEZ	<i>MAYRA GOMEZ</i>	parent	El Marino	mayra145@aol.com
Toshi Aoyagi	<i>Toshi Aoyagi</i>	parent	El Marino	310-342-2502
ANGELICA S CHO	<i>ANGELICA S CHO</i>	parent (in full)	El Marino	310-723-6009
Tomoko Ozawa	<i>Tomoko Ozawa</i>	Parent	El Marino	310-922-5717

independent

Print Name	Signature	Relation to CCUSD	School if applicable	Email/phone
HA CHOW	<i>HA CHOW</i>	parent	CCMS	teacher@hotmail.com
Gloria Williams	<i>Gloria Williams</i>	Parent	CCMS	guilliamsdc@gmail.com
Nathalie Schlemmer	<i>Nathalie Schlemmer</i>	Parent	Fauquier-CCMS	nathalie.schlemmer@school.com
Jean-Bernard Hebert	<i>Jean-Bernard Hebert</i>	Parent	CCMS-EM	jb2hebert@gmail.com
Tracy Pumlila	<i>Tracy Pumlila</i>	Administrater	El Marino	tracy.pumlila@ccusd.org
Siori Sotoguchi	<i>Siori Sotoguchi</i>	teacher	"	siori.sotoguchi@ccusd.org
Timothy Mark	<i>Timothy Mark</i>	teacher	"	timothy.mark@ccusd.org
Alice Heriba	<i>Alice Heriba</i>	teacher	"	aliceheriba@ccusd.org
Maria Ferreira	<i>Maria Ferreira</i>	Parent	EM	ferreiras@education.com
Lisa Grace	<i>Lisa Grace</i>	Parent	EM-CCMS	lshellin@ca.com
SUSAN WARD	<i>SUSAN WARD</i>	PARENT	EL MARINO	sward68@gmail.com
Elizabeth Hope Smith	<i>Elizabeth Hope Smith</i>	PARENT	EMCS	hopesmith@gmail.com
Sonia Calo	<i>Sonia Calo</i>	Parent	EMCS	beckeechalo@yahoo.com
Emily Demant	<i>Emily Demant</i>	Parent	EMLS	emnty@yahoo.com
JANE YOYOTA	<i>JANE YOYOTA</i>	PARENT	LA BALLONA	yoyotajane@gmail.com
Deborah Komatsu	<i>Deborah Komatsu</i>	PARENT	EL-MARINO	deborahkomatsu@aol.com

Clean Air: El Marino

Discussion Point 2



How do we ensure the buy-in of community partners, in particular decision-makers in the community?

Clean Air: El Marino

Core Principles

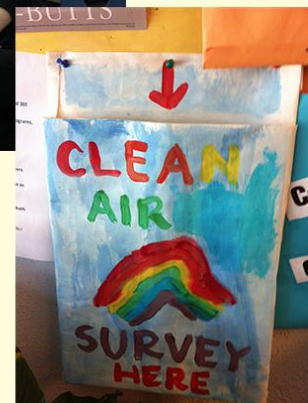
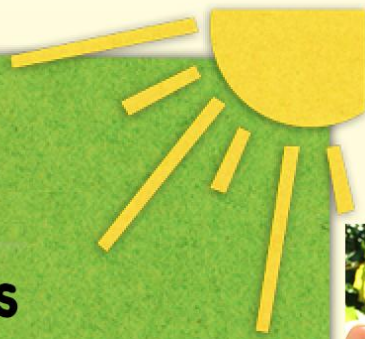


- Focus on solutions
- Believe that we are engaged in community-building
- Strongly advocate for the children, parents, teachers, and school
- Maintain transparency
- Establish ourselves as a reliable resource for information about air pollution, public health & mitigation solutions
- Use scientific knowledge to guide our agenda
- Consider community and academic partners as equal partners in defining problems, conceptualizing problems, defining the agenda, proposing strategies and engaging in action
- Communication, communication, communication: open and on-going with all community partners

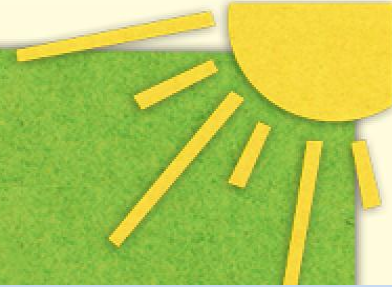


Clean Air: El Marino

2012-13 School Year: Immediate/Long-term actions

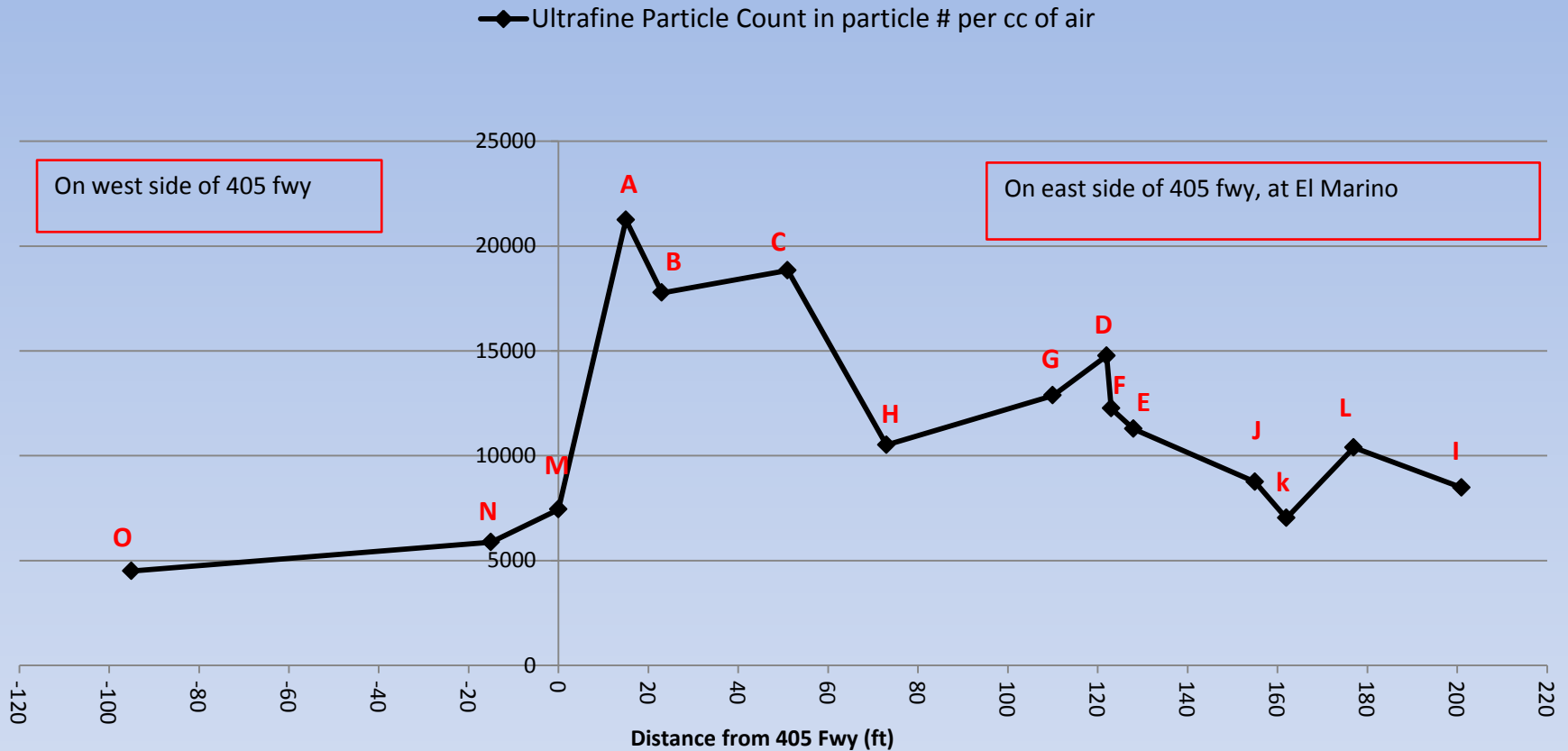


Clean Air: El Marino 2012-13



- Identified key decision makers, established credibility and communication.
- New superintendent and assistant to the superintendent:
 - We enlisted their support and established communication.
 - Scheduled meetings and maintained ongoing communications to share info.
- Presented updates at school board meetings.
- Obtained recognition as school PTA subcommittee.
- Launched Monthly Classroom Wipedowns- helped teachers clean classrooms before start of school year- parents volunteered for rest of year.
- Researched and supported school efforts to acquire Door Mats for each classroom
- Researched and supported school efforts to acquire HEPA filter Vacuum cleaners
- Measured UltraFine Particles throughout school, using P-tracks /preliminary & follow ups
- Conducted a survey of community needs assessment- high response rate
- Facebook page
- Launched No-Idling Campaign

Ultrafine Particle Count by Distance from 405 Fwy and Sampling Location El Marino Language School- 2/22/13

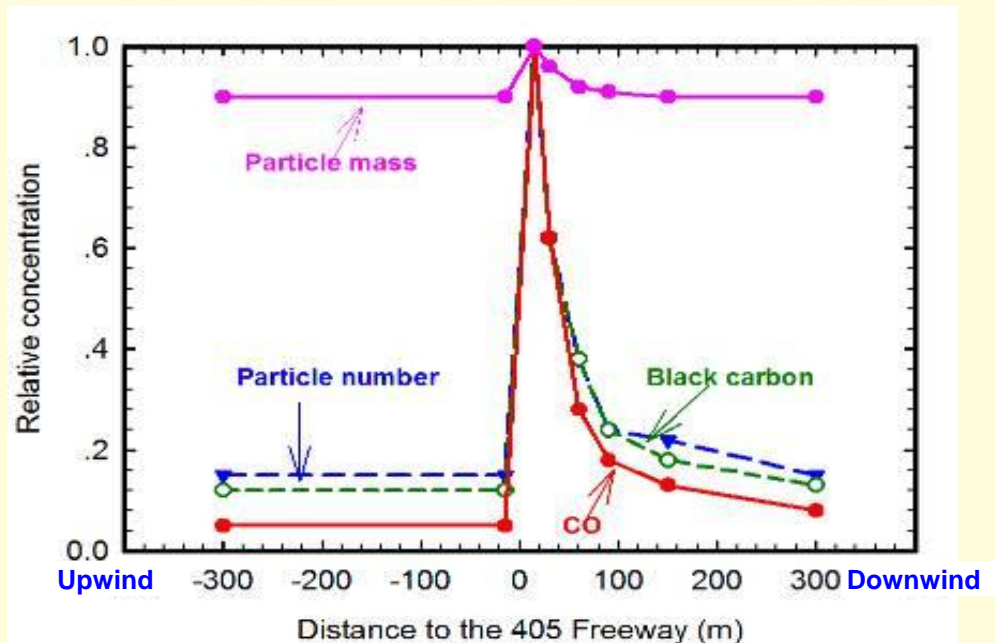


SAMPLING LOCATION:

- A - Next to fwy, on sidewalk, across from school
- B - Inside school- outside kinder classroom, rm 18
- C - Kinder playground, between swings and slide
- H - Basketball court- in center
- G - Green field- center- at level of tether
- D - Courtyard, in front of rm 6
- F - Lg playstructure next to zipline
- E - Courtyard, outside rm 5, close to lg playstructure

- J - Outside cafeteria, eating area w/ tables
- K - Inside cafeteria
- L - Inside Auditorium
- I - Green field, at first base diamond, next to EM Park
- M - Under fwy
- N - West of fwy, in front of 11550 Port
- O - West of fwy, at Slauson and Port

Concentration and size distribution of UFP near major highways



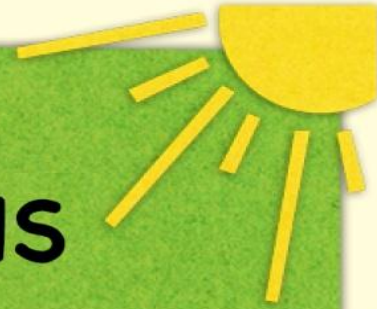
Air pollutant levels are high near freeways and these levels drop off substantially with distance downwind from a freeway within the first 150 m (approx. 500 feet). These measured pollutants include ultra-fine particles, total nitrogen oxides, nitrogen dioxide, and black carbon.

Source: Zhu et al (2002). Study of Ultrafine Particles Near a Major Highway with Heavy-Duty Diesel Traffic. *Atmospheric Environment*, 36: 4323-4335.

WEBSITE

Clean Air: El Marino

COMMUNICATIONS



Meeting Minutes/Videos on website

Mailing List

Weekly schoolwide eBlast

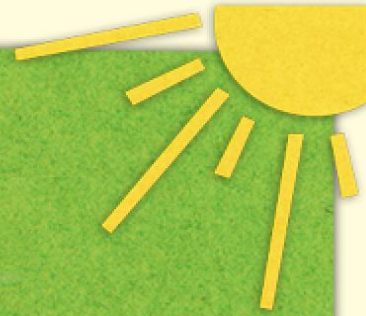
PTA meetings

Community Survey

School Partnerships: Drop Zone, Green5

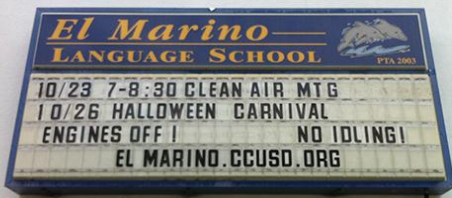


Clean Air: El Marino



2013-14

School Year (so far!)



Pilot Air Filtration/HVAC System

A Joint Project between:
Culver City Unified School District,
Clean Air: El Marino,
So Cal Air Dynamics, IQAir & Ferguson Enterprises
<http://www.cleanairem.org>



California State University
Northridge

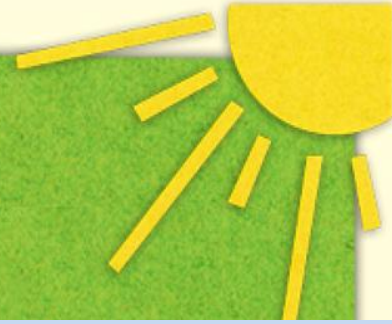


FERGUSON
Bath, Kitchen & Lighting Gallery



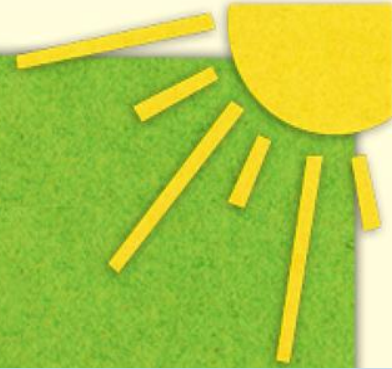
Clean Air: El Marino
www.cleanairem.org

Clean Air: El Marino 2013-14 so far...



- City coordinates with school for Anti-Idling signs
- Planted Trees on campus beautification day
- Participated in district meetings re. potential Capital Improvement Bond Measure
- Installed pilot Air Filtration/HVAC unit :
 - installation cost covered by CCUSD
 - unit donated by Ferguson Air
 - installed by SoCal Air Dynamics
- Connected and built relationships with Candidates for School Board and newly elected members
- Hosted a meeting on campus: Federal EPA, EPA region 9, AQMD, Cal Trans, academic and community partners

Clean Air: El Marino 2013-14 so far...



- Stepped up Classroom-wipe-down efforts from monthly to weekly
- Met with custodians to discuss improved cleaning practices
- Coordinated with Green 5 for Less-Chemicals-In-Cleaning campaign
- Teacher workshop on Chemical-Free dust removal
- Tested pilot HVAC/filtration efficiency: AQMD, 42 hour sampling
- Coordinated with Cal Trans to plant adequate trees next to fwy
- Obtained CalTrans support for willingness to write on our behalf, a large grant for planting school, neighborhood, and city

Clean Air: El Marino



Community Partner	Lessons Learned
Assistant Superintendent	<p>No situation is “un-fixable”, it just takes dedication and determination to find good solutions.</p> <p>A willingness to try all potential solutions is critical to the effort, even if others question the approaches that you choose.</p> <p>Stay the course even though the challenge may seem insurmountable.</p> <p>It is important to identify your “Champions” early on, then support and encourage their efforts.</p> <p>Don't let others discourage you just because there is no 100% "totally perfect" solution to the challenge</p>

Community Partner	Challenges	Lessons Learned
Teacher 1	<p>In the past, teachers kept the process within the teachers, not "alarming" parents. It was a mistake.</p> <p>Staff tried getting attention about traffic air pollution issue before, unsuccessfully</p> <p>In past years, air quality measurements did not reflect exposures of concern. Staff did not feel that the true situation was thoroughly measured.</p>	<p>It was helpful to get on a team that included parents. The administration tends to be very responsive to parent concerns.</p> <p>A blend of teacher/parent/admin/ university/ community agency interest in problem resolution is far more effective.</p> <p>Greater direct involvement in the air monitoring tasks was important.</p> <p>Helpful strategies: use of social media, website, video, phone conferencing for participation at meetings, enlightened administrators/ school board, and recognition of the Clean Air group efforts by the PTA.</p>

Community Partner	Challenges	Lessons Learned
Teacher 2	<p>I think the more parents know about the reality of the situation, the more effective.... less credence is given to teachers who are upset about "working conditions" or "public health".</p> <p>It is difficult to mobilize our staff because poor air quality an invisible threat that gets lost in a sea of much more tangible/immediate priorities.</p> <p>Visibility is super important. We need to measure with p-Trak more often, in front of parents and students. Create more events, assemblies, T-Shirts....</p>	<p>This was an effort that required many years and many people.</p> <p>The more Advocates For Clean Air reached out to the community (parents, EPA, PTA, CalTrans...) the better able we were to address our needs and increase awareness on campus.</p> <p>Networking and reaching out has proven really effective. Now organizations and parents are reaching out to us to see how we can solve this issue in myriad ways - no idling, tree planting, carpooling...</p> <p>I think that a huge reason why our group has had any success is that a group of very dedicated parents found each other and refused to give up. It's amazing what a small group can get done when they have a strong will and are willing to put in time.</p>

Community Partner	Challenges	Lessons Learned
<p>Parent</p>	<p>One major challenge was to not think too much about the negative health impact that my children are experiencing everyday while we move our efforts forward.</p> <p>Organizing volunteers has been a challenge to our impact. A few people handling most all activities.</p> <p>Finding time to edit down our long meeting videos into something a person can sit and watch or read.</p>	<p>It felt good when we felt our level of credibility reached the point where we could request our own meetings with the Superintendent, Assistant Superintendent, Principal.</p> <p>I learned to speaking confidently at School Board meetings and feeling heard.</p> <p>Building bridges with our School Principal and collaborator, was a rewarding experience.</p> <p>Forming connections with CalTrans, EPA and AQMD, was a positive experience.</p> <p>Transparency of our process is important.</p> <p>I learned to stay consistent with positive solution-focused messaging and avoiding raising fears.</p> <p>Importance to have Teacher reps on committee to communicate with all teachers.</p>

Academic Partner	Challenges	Lessons Learned
Faculty 1	<p>This was not a traditional research project. The goal is different and the difference is reflected in resources and approach.</p> <p>Parents/district/teachers want more answers from data than can be provided.</p>	<p>Science is used to support decisions; does not necessarily guide them. Process is driven largely by enthusiasm and dedication.</p>

Academic Partner	Challenges	Lessons Learned
Faculty 2	<p>Community-engaged scholarship poses significant challenges to traditional definitions of research and scholarship.</p> <p>There is often a gap between the promise of health professional schools as community-engaged institutions and the reality of how faculty members are typically judged and rewarded. For example, faculty are often rewarded more for publishing a paper in an academic journal than for contributing to improving environmental health in a community.</p> <p>Establishing respectful, trusting relationships in a community takes considerable time and effort.</p> <p>Frustrations- no funding</p>	<p>School parents determined additional problems (classroom dust, idling vehicles) and were empowered to determine an approach to address the newly identified problems.</p> <p>I applied my expertise to real-world problems and collaborated with different partners that brought knowledge, wisdom and expertise to the project.</p> <p>Whenever I felt exhausted and ready to give up, there was so much support, momentum and strong will in the group. We kept on moving.</p> <p>You have to be willing to work as part of a team, and to not be a control freak. You have to be willing to let go. It was a rewarding experience. The partnership was transformative for all involved. I would not go back to doing research the other way.</p>

Clean Air: El Marino

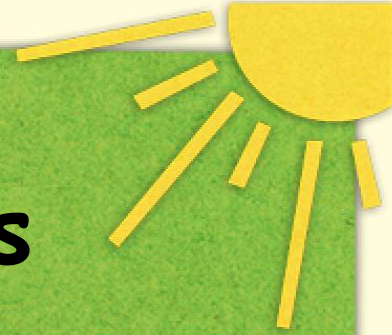
Next Steps



- Analyze, with AQMD, data collected to assess efficiency of installed pilot filtration system, communicate results to community and school board.
- Continue participation in “Bond Measure” workshops held by the district
- Participate in campaign to get the Bond Measure on the ballot in early 2014 and pass the measure: fund air filtration/HVAC for entire school
- Pursue CalTrans re. a grant to plant trees on school campus and in the neighborhood
- Provide educational forums for topics identified by community survey
- Assist other CCUSD schools with air pollution issues
- Pursue funding to build a Tool Kit that will include a documentary film, to share what we did and what we learned with other schools near major roadways, particularly those in vulnerable communities.

Clean Air: El Marino

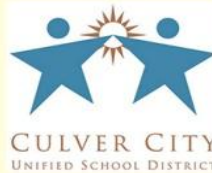
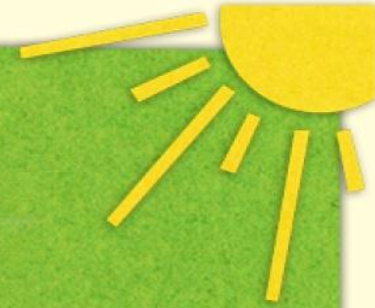
Community Resources



- School board members, CCUSD
- Superintendent and Assistant, CCUSD
- School teachers, EMLS: Roberta Sergant, Cristina Paul.
- Parent-Teacher Association, EMLS
- Parents: Ariadna Martinez, Christina Dronen, Todd Johnson
- United Parents for Culver City
- Dr. Rob McConnell, USC
- Carla Truax,, USC, Community Outreach Center
- and Andrea Hricko, USC, Community Outreach Center
- Dr. Phil Fine and Dr. Andrea Polidori, AQMD
- Rob Kosinski, CalTrans
- Katie Stewart and Jorine Campopiano, EPA, region 9
- Dr. Richard Baldauf, EPA
- John Ellis, contractor, SoCal Air Dynamics
- Owner, Ferguson Enterprises, donated Filtration/HVAC unit
- Dr. Nola Kennedy, Faculty, California State University Northridge
- Dr. Jane Steinberg, Director, Policy and Programs, HIV/STD Programs, LA County Public Health Department

Clean Air: El Marino

PARTNERS



Clean Air: El Marino

Community-Engagement in Environmental Health



- Like us on Facebook
<https://www.facebook.com/cleanairem>
- Visit our website
<http://www.cleanairem.org/>
- Email us at
info@cleanairem.org

Clean Air: El Marino

Discussion Point 3



Are the benefits of establishing partnerships within and outside a community limited to the project under study? Why?

Clean Air: El Marino

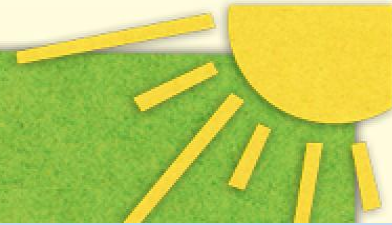
Community-Engagement in Environmental Health



- It requires courage, transparency, tenacity, ethical and moral leadership, and commitment for the common good. And PATIENCE...
- The needs of a community can be great and we cannot work on all the issues at once. By building authentic community partnerships we can establish models of shared power through these trusted partnerships.
- Established partnerships can be called upon time and time again to address many issues faced by the community.
- Community-driven change is central to effective and sustainable environmental and public health efforts.
- Community engagement empowers community members to address study themes as well as other unexpected ones.

Clean Air: El Marino

References



1. McConnell et al. (2010). Childhood Incident Asthma and Traffic-Related Air Pollution at Home and School. *Environmental Health Perspectives*, 118(7): 1021-1026. Retrieved on 11/23/12 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2920902/>
2. Gauderman et al (2007). Effect of Exposure to Traffic on Lung Development from 10 to 18 years of age: a Cohort Study. *The Lancet*, 369: 571-577. Retrieved on 11/23/12 at <http://www.ncbi.nlm.nih.gov/pubmed/17307103>
3. Kim et al (2004). Traffic-Related Air Pollution Near Busy Roads: The East Bay Children's Respiratory Health Study. *American Journal of Respiratory and Critical Care Medicine*, 170(5):520-526. Retrieved on 11/23/12 at <http://ajrccm.atsjournals.org/content/170/5/520.full.pdf>
4. Gasana et al (2012). Motor Vehicle Air Pollution and Asthma in Children: A Meta-Analysis. *Environmental Research*, 117: 36-45. Retrieved on 11/23/12 at <http://www.ncbi.nlm.nih.gov/pubmed/22683007>
5. Zhu et al (2002). Study of Ultrafine Particles Near a Major Highway with Heavy-Duty Diesel Traffic. *Atmospheric Environment*, 36: 4323-4335. Retrieved on 11/23/12 at <http://co.marin.ca.us/depts/CD/main/pdf/eir/Big%20Rock/Suplimentals/38.%20Zhu%202002%20-%20Concentration%20and%20Size%20Distribution%20of%20Ultrafine%20Particles%20near%20a%20Major%20Highway.pdf>
6. California Education Code Section 17213. Retrieved on 11/23/12 at <http://law.onecle.com/california/education/17213.html>
7. California Environmental Protection Agency (April 2005). Air Quality and Land Use Handbook: A Community Health Perspective. Retrieved on 11/23/12 at <http://www.cde.ca.gov/lc/fn/cf/schoolsiteguide.asp#Roadways>

Clean Air: El Marino

References



8. California Department of Transportation (2012). Retrieved on 11/23/12 at <http://www.dot.ca.gov/dist6/faq/noise.htm>
9. Industrial Hygiene Survey Report (May 23, 2008). Indoor Environmental Quality Study, CCUSD, El Marino Elementary School.
10. Federal Highway Administration (1999). Initial Study/Environmental Assessment.
11. I-405 (San Diego Freeway) HOV Lane Project from SR90 (Marina Freeway) to I-10 (Santa Monica Freeway) (Final IS/EA). June 2000. Retrieved on 11/23/12 at <http://www.dot.ca.gov/dist07/resources/envdocs/docs/la405hovisea.pdf>
12. Russel et al (2010). Performance Evaluation of Air Filtration Devices: Final Report. Prepared for the South Coast Air Quality Management District. Retrieved on 11/23/12 at <http://www.aqmd.gov/tao/ConferencesWorkshops/VOCRemovalForum/Fitz.pdf>
13. Office of Environmental Health Hazard Assessment (2004). Air Pollution from Nearby Traffic and Children's Health: Information for Schools. Retrieved on 11/23/12 at http://www.oehha.ca.gov/public_info/facts/pdf/Factsheetschools.pdf
14. South Coast Air Quality Management District (2010). Review of the Draft EIR for the Santa Monica-Malibu Unified School District. Retrieved on 11/23/12 at <http://aqmd.gov/ceqa/igr/2010/June/DEIRsmHS.pdf>
15. Commission on Community-Engaged Scholarship in the Health Professions (2005). *Linking Scholarship and Communities: Report of the Commission on Community-Engaged Scholarship in the Health Professions*. Seattle, WA: Community-Campus Partnerships for Health. Retrieved from http://depts.washington.edu/ccph/pdf_files/Commission%20Report%20Final.pdf